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ABSTRACT

A new phenomenon is emerging: companies are diverging from human capital theory by providing employees a general education in addition to specific training at the workplace. Blue collar workers often do not pursue higher education due to perceived lack of opportunities. If an employer provides educational opportunities, blue collar workers may experience a shift in mind and attitudinal change. Vroom's expectancy-valence theory explains workers' participation in education opportunities at the workplace: they believe participation will have certain desirable consequences (expectancy) and they conceive of participation as a means to satisfy their needs (valence). Evidence suggests that providing blue collar workers with opportunities for a general education at the workplace will reduce workers' perceived barriers for participation and provide a rationale for participation with expected outcomes. Innovative education and industry partnerships have implications for enterprises as they strive to correlate workplace learning to performance and production. Such workplace strategies include the following: tuition reimbursement; onsite professional education for engineers and management; Honeywell (Canada) Ltd.'s partnership with a community college that launched a lifelong learning initiative to enhance self-directed work teams, empowerment, global competitiveness, and a high performance workplace; and Ford Motor Company's program for life enhancement opportunities. (Contains 33 references.) (YLB)

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The Latent Factor — An Impetus for Employer Provided Education

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Responding to rapid technological growth and increased global competition, contemporary Western enterprises have restructured their organizations from the Taylorist model to examples exhibiting workplace environments that foster worker participation, decision-making, teamwork, and learning. Amongst these changes, a new phenomenon is emerging; whereas, some corporations are opposing the traditional paradigms and employing a new humanistic ideology to improve performance and motivate their workforce.

This paper explores the phenomenon of an employer provided general education leading to a degree as opposed to specific job training schemes in the workplace. In particular, this paper suggests that there is a latent factor from employer provided educational opportunities on the motivation and performance of industrial manufacturing "blue collar" workers.

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Introduction

Why would an employer act contrary to the archetypical human capital theory? In Becker's (1993) discourse on human capital theory, he distinguishes between general education and specific training provided in the workplace. He espouses that the marginal productivity from general training will not benefit the company. Therefore workers should bear the cost of general training in exchange for marketability. Specific training may provide workers with increased security and income with little or no marketable skills; therefore, the company should bear some or all the training cost.

This was evident as Becker (1993) asserted that if the employer provides a general education that increases the employees' marketability, the employer is at risk from poaching of employees by other companies. Therefore, it makes more sense for employers to only provide specific training to the task at their workplace and not bear the cost of general training. However, some contemporary Western enterprises have provided general educational opportunities for their employees.

This paper explores this new phenomenon where some companies are divergent from human capital theory by providing their employees a general education in addition to specific training at the workplace and suggests a correlation between receiving specific educational opportunities and the motivation and performance of industrial manufacturing "blue collar" workers. In particular, this paper explores the consequences of employers

providing general education opportunities that lead to a degree as opposed to specific job training schemes in the workplace.

Impact of General Education Opportunities at the Workplace

This paper illuminates significant issues vis-à-vis a new management philosophy, whereas, employers provide general education opportunities in addition to specific training in the post-taylorist workplace. First, it suggests perceptions held by blue collar workers in industrial manufacturing facilities of the values of post secondary education and lifelong learning initiatives.

Second, this paper suggests strategies that support a rationale for corporations to find alternatives to Becker's (1993) assertion that the marginal productivity from general training will not benefit the company. These new general educational strategies are part of the rapidly changing workplace environment in this post-taylorist era. Besides providing general educational opportunities for workers in the new post-taylorist workplace, corporations are restructuring their organizations through the implementation of concepts such as decentralization, multiplication of profit centers, lean production and lean management, team work and total quality control. To implement these changes in the environment of the workplace, industry leaders are changing management practices to support an organizational culture wherein formal and informal learning processes are seen to be intrinsic to organizational learning (Marsick & Watkins, 1990, 1996; Senge, 1990; Marsick 1987; OECD, 1986; Argyris & Schön, 1978).

Finally, this paper elucidates new innovative education and industry partnerships with implications for employer provided education. These new education and industry partnerships provide insight for enterprises and policymakers with the augmenting debate over government education and training policy.

Insight into the Blue Collar Workers' Perspective

My emergence from a blue collar industry and craft milieu to obtain educational opportunities, and from a decade of technical college teaching, administration, and advising vocational students, has led me to suggest that many blue collar workers in manufacturing jobs do not pursue higher education due to perceived lack of opportunities. This perception may stem from the blue collar workers' cultural, social, family, personal, or financial barriers. If an employer provides educational opportunities, blue collar workers may experience a shift in mind and attitudinal change.

Darkenwald and Merriam (1982) support my experiential discernment over environmental issues in their Psychosocial Interaction Model vis-à-vis perceived value, incentive for participation, and barriers to participation.

Likewise, the Tomasko and Dickinson (1991) case study of the UAW-Ford Education, Training, and Development Program found that perceived barriers were a major deterrent to workers participation in education programs. In their comprehensive study,

Gordus, Kuo, and Yamakawa (1991) illuminated the impact life/education advisors (education and career guidance counselors) had on participation in the education and training opportunities in a study of the UAW-Ford Education, Training, and Development Program. In particular, Gordus, Kuo, and Yamakawa's study utilized a quasi-experimental design of pretest/posttest random sampling of both an experimental group and control group in four different facilities. All subjects of their study had access to the programs and tuition; however, only the experimental group had access to on-site life/education advisors. Their study supported their hypothesis that social support and guidance agents had a direct influence on females and both a direct and indirect influence on males by reducing their perceived barriers to participation in education opportunities.

Affirming my assertion that employer provided educational opportunities at the workplace may diminish the workers' perceived barriers for participating in education, Gordus, Kuo, and Yamakawa (1991) found that the on-site course offerings in the UAW-Ford Education Development Training Program eliminated some barriers to education, such as travel time. After removing the barriers, and in the absence of many complicating factors, they found that workers vary their behavior and engage in new productive behaviors from shift in mind and attitudinal change. Gordus, Kuo, and Yamakawa suggest that the next phase in their research could explore how participation in educational opportunities and educational attainment changes the attitudes, values, and perceptions of blue collar workers and how these changes affect behavior.

Indeed, in developing a hypothesis that receiving general education opportunities may effect performance and motivation, one should consider the individual and the individual's needs. Maslow (1970) points out that the individual has needs, wants, and desires that if left unfulfilled may hinder self esteem, self actualization, or enlightenment. If one assumes that individuals need to identify through their position in society, that individuals want opportunities to progress toward fulfilling their goals, and that individuals desire improvements over their current situation, then one may conclude that the individual has concerns about self development and fulfillment. However, it is probable that workers may not step outside and analyze their situation as Barnett (1990) explicates in his emancipation philosophy, and therefore Maslow's humanistic approach to individual needs may not motivate workers. Workers more likely will be inspired to participate in education opportunities at the workplace and experience behavioral change and motivation from Vroom's (1959, 1964) expectancy-valence theory; whereas, they believe that participation will have certain desirable consequences (expectancy) and they conceive the participation as a means to satisfy their needs (valence). Hence, the workers subscribe to a philosophy that education is directly proportional to career and financial opportunities, and align themselves with variations of human capital, screening-credentialism or competition theory. These theories may identify an expectancy-valence rationale for workers to participate in educational opportunities at the workplace and provide an impetus for behavioral change in motivation and performance.

Rationale for Participation

Mincer (1989) utilizes several studies which include empirical data from the Bureau of Labor Statistics, University of Michigan's Panel Study on Income Dynamics, National Longitudinal Samples, the Current Population Survey, the Equal Opportunity Pilot Project, as well as analysis of these same studies by several researchers in order to identify correlation between cost of education and training with the economics of human capital as related to job tenure, unemployment, wage growth, and productivity growth. In analyzing data, Mincer compares younger workers with mature workers, and male workers with female workers. Mincer describes his study as a "review of (a) effects of human capital on the wage structure and on labor turnover and of (b) human capital responses to technological change and consequent wage, turnover, and unemployment effects" (p. 27). Mincer argues that the value of education and training as human capital promotes employment stability, improves wage increases, and increases production. Data comparing Japan and the United States points out that increased expenditures in on-the-job training increases wage and productivity growth. Thus, emphasizing training for new hires may have the greatest impact.

If viewing only this hypothesis of the value of education and training, one could state that the level of education is directly proportional to career and financial opportunities. In contrast, given perfect economic market assumptions, Becker (1993), Cohn & Geske (1990), and others found that as education increases there is a point when the benefit-cost internal rate of returns slows down or becomes negative. Mincer (1989) found that productivity growth

was a result of technological change and that demands for education and training are increased by the technological process.

Mincer correlated the relationship of education and training human capital to employment potential with technological change using economic assumptions and quantitative methodology. However, he excluded data on quantity versus quality. Schultz (1982) addresses the quality of education by means of a more classical economic human capital theory. Schultz defined education as human capital theory providing a personal acquired ability, developing one's earning potential, values and analytical skills impacting time allocation, consumption activities, marriage, health, self-esteem, personal economics, children's education, social competence, etc. He points out that once one acquires education, no one can take it away, nor can one sell or give it away. Therefore, having an education is personal stock or capital and is therefore human capital since human beings possess it.

The screening hypothesis (or theory of credentialism) is a complement or an alternative to human capital theory. Screening hypothesis attempts to define a dynamic relationship between the demand for education and employment through the hiring practices of employers. Considering education in relation to increased productivity, the screening model identifies sociological selection in hiring practices. Given the unknown abilities of potential workers' ambition, confidence, interpersonal relations and cognitive skills, employers use educational credentials as criteria for hire because educated workers may possess a higher level of these skills (Blaug, 1976). Groot and Hartog found that under the screening hypothesis "employers pay higher starting wages to the higher educated because of incomplete

information on productivity" (1995, p. 38). In a similar hypothesis, Groot and Hartog define credentialism as requiring education as a prerequisite for hire in specific occupations. Cohn and Geske (1990) identify the screening (credentialism) hypothesis sequence; whereas:

Investment in Education ⇒ Higher Credentials ⇒ Higher Earnings

Under the screening hypothesis workers seek educational credentials in order to obtain better positions. Therefore, this hypothesis relates to the demand side of education for the labor market, while human capital theory deals primarily with the supply of education for the labor market (Blaug, 1976).

The screening hypothesis has both a weak and a strong version. The weak version demonstrates that employers pay higher starting wages to higher educated workers because they do not have an adequate knowledge of the workers' abilities. The strong version emphasizes that employers continue to pay higher wages to higher educated workers throughout their careers, even after they have ascertained their abilities (Cohn & Geske 1990, Groot & Hartog 1995). However, Groot and Hartog's empirical research indicates that the strong version does not always apply.

The competition model is similar to the screening hypothesis. Thurow provides a lucid view of the American labor market, in that workers compete for job opportunities and promotions in the workplace. Education does not always play the predominate role in this

model. The employer selects the workers by preference and often trains them on the job. "In effect, education becomes a defense expenditure necessary to protect one's market share" (Thurow 1972, p. 79). Therefore, workers obtain education credentials to compete for jobs.

Whether participating in education as an insurance policy against layoff during downsizing, upward mobility within the company, obtaining employment opportunities with other companies, or competing for positions, the expectancy-valence theory is pivotal in the workers' rationale for participation.

Indeed, there is evidence to suggest that providing blue collar workers with opportunities for a general education at the workplace will reduce workers' perceived barriers for participation and provide rationale to participate with expected outcomes. It is admirable that some enterprises provide general education opportunities for their employees, but why?

The Employer Perspective

As Watkins (1995) points out, in the post-taylorist organization enterprises are striving to correlate workplace learning to performance and production. She suggests that credentialing systems such as Motorola University and Mastercard University and other such workplace strategies will become more prevalent in post-taylorist enterprises. This is evident in the rapid emergence of tuition reimbursement programs.

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Although using questionable non-scientific data, Eurich (1985) asserts that "80-90 percent of corporations have well-established tuition refund policies for employees to study in colleges and other higher education institutions"; however, a small percent of eligible employees take advantage of tuition reimbursement opportunities. Although Eurich used an investigative journalist's article to make such an assertion, it is evident that a large number of companies have tuition strategies. Nash and Hawthorne (1987) concur with Eurich in that even though there are numerous tuition aid programs available, only a small percentage of workers utilize the programs. However, they found that the number of workers attending on-site courses (generally offered during working hours) was much greater than those attending colleges or universities off site at their employer's expense (either during or after working hours). This may be a result of assumed barriers of travel time, distance, and parking.

Amongst the numerous tuition strategies, the United Auto Workers (1997a,b,c,d) has negotiated with all three automakers for educational benefits including tuition reimbursement schemes. The UAW-Chrysler, UAW-Ford, and UAW-GM agreements provide up to $3,800.00 per calendar year for prepayment of tuition and fees for approved courses leading to degrees at approved educational institutions. If a worker expends the $3,800 in the current year, the worker may obtain an advance of up to $1,000 from the next years eligible assistance. Additional provisions allow for life enrichment and other non-degree courses, workers on indefinite layoff, retirees, and dependent tuition assistance.

In addition to tuition reimbursement schemes, there are a number of corporations providing on-site professional education for engineers and management; however, there are

few employers offering general education opportunities at the workplace for blue collar workers. Some employers believe they have found a rationale for providing general education opportunities for workers. Indeed, Honeywell (Canada) LTD. in Scarborough, Ontario, with 500 hourly employees, addressed this motivational factor through education. Instead of modernizing the equipment, reducing wages, and streamlining the workforce, Honeywell developed a partnership with Humber College (a community college in the Toronto area) and launched a lifelong learning initiative to enhance self-directed work teams, empowerment, global competitiveness, and a high-performance workplace. From 1991 to 1993, sixty percent of Honeywell's employees participated in an after-work 'Learning for Life' program, attending college level courses with opportunities to earn college diplomas and certificates. Employees received free instruction, books, and supplies, and attended classes in classrooms at the workplace on their own time (Nopper, 1993).

The result of the Honeywell and Humber College education and training partnership is admirable. Two years into the project, Honeywell's per employee productivity was up forty percent, order to delivery time decreased by fifty percent, and their quality control improved by a fifty percent reduction in the rework and scrap rates (Nopper 1993).

Although Nopper's case study of the Honeywell facility alluded to general education opportunities at the workplace, I found in a 1997 interview with Honeywell that most of the on-site 'Learning for Life' courses were in basic skills and English as a second

language. Honeywell held some of the courses towards college degrees at the workplace; however, the program predominantly provided college degree courses through a tuition reimbursement program at Humber College. Honeywell officials did describe the success of the program and the motivational effects.

In the United States, Fernberg (1993) and Hequet (1994) found that Ford Motor Company provides training at the workplace that promotes employee motivation and attitude on their current job, even if employees are training for another industry.

Ford Motor Company in partnership with the United Auto Workers (UAW) offered employees education and training opportunities through arrangements with local educational institutions at twenty-nine plants. Classes were held at no cost to employees and were scheduled on site to accommodate all shifts. The program promotion included the UAW, a satellite broadcasting studio for teleconferencing and a traveling tractor-trailer containing an exhibit of a thousand square foot theater and displays identifying the numerous educational opportunities (Tomasko & Dickinson, 1991). An employee participation study of the 1980s through 1993 showed that: 1) fifty-five thousand active employees and spouses participated in basic skills enhancement, in which over seven hundred have completed high school; 2) thirty-nine thousand active employees participated in personal development courses, such as time management, computer skills, and interpersonal communication; and 3) forty-eight thousand active employees enrolled in college and university offerings held on site at twenty-nine plant locations. Eighteen

hundred employees and eligible family members graduated from this program with twenty-five Associates, nineteen Bachelors, and six Masters Degrees (Hequet, 1994).

The Gordus, Kuo & Yamakawa (1991) study concluded that the Ford-UAW program was very successful and that the program benefited Ford and the employees via the life enhancement opportunities.

By providing a general education rather than specific training that may be obsolete in a few years, these companies have invested in labor power and motivated their workforce with employees that possess the analytical skills to rapidly adapt to technological changes in the workforce. It is these motivational, personal mastery, and analytical skills that provide substantial increase in production and return on investment.

It will require additional research to determine whether providing employees general education for lifelong learning, albeit education that may be unrelated to the workplace task, will improve profits and global competitiveness. However, Honeywell and Ford believe that investing in labor power will benefit their future profitability and survival in today's global economy. This potential profitability for industry may enhance lifelong learning opportunities and inspiration for blue collar workers.

Conclusion

It is evident from the human capital, screening, credentialism, and competition theories that there are benefits from obtaining an education, and that the expectancy of

receiving such benefits has an effect on the performance and motivation of participants (Scanlan 1986, Rubenson 1977, Gordus, Kuo & Yamakawa 1991). And though workers recognize a value in education, they perceive barriers to participation in education opportunities. Through employer provided educational opportunities, blue collar workers may overcome these perceived barriers and experience a behavioral change. Metaphorically expressed, when the worker realizes an expectancy by receiving education opportunities at the workplace, the worker may "see the light at the end of the tunnel" and thus experience a change in attitude. This change may have a positive effect on the workers' motivation and job performance, which provide the employer with a motive to deviate from the archetypal human capital theory and provide a general education at the workplace. Hence, this new phenomenon elucidates a latent factor vis-à-vis employer provided educational opportunities on the motivation and performance of industrial manufacturing blue collar workers.

To transcend beyond its genesis, and to ascertain that these are not *post hoc* fallacies caused by other humanistic management endeavors, a hypothesis which suggests that there is an effect on the motivation and performance of blue collar workers participating in an employer provided general education at the workplace requires further quantitative and qualitative validation.

The implications of this hypothesis not only provide an impetus for an employer provided education, but also pose new dynamics for educational policymakers. Indeed, this hypothesis advocates industry and college/university partnerships that integrate courses and

programs at the workplace. In addition, the influence on-site life/education advisors had on diminishing the barriers for participation in education programs in Gordus, Kuo, and Yamakawa's study warrants consideration of career life advisors at the workplace.

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